



## “Clarification on VA 590 Nutrient Management Implementation”

October 2014

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### **1. Purpose of this document**

The purpose of this document is to help NRCS personnel and their clients understand and implement the existing 590 Standard more effectively and consistently. Specifically, it clarifies existing NRCS expectations with respect to nutrient management recordkeeping required for 590 implementation. This document also addresses the role of third-party consultants or farmer advisors in the 590 nutrient management implementation and recordkeeping process. Although the primary audience for this document is Virginia NRCS personnel, it may be shared with NRCS clients and their advisors engaged in 590 implementation. This clarification applies to all 590 implementation since finalization of the current Virginia 590 Standard in October 2012, including 590 financial assistance contracts that went into effect after that date.

### **2. Background: The VA NRCS 590 Standard**

#### **a. What is the VA NRCS 590 Standard?**

The VA NRCS 590 Standard defines what is required to implement nutrient management according to the Natural Resources Conservation Service (NRCS) in Virginia (a full copy of the current VA 590 Standard is available from any local NRCS office or the following weblink: <http://efotg.sc.egov.usda.gov/references/public/VA/VA590..pdf>).

Implementing the VA 590 involves three general steps:

- i. Preparing a nutrient management plan (NMP) for the management of all nutrients, including fertilizers and manures, that is customized to the farmer’s fields and cropping system.
- ii. Carrying out key NMP recommendations on the land.
- iii. Keeping records to show that the farmer properly carried out those key NMP recommendations.

#### **b. Who must implement the VA NRCS 590 Standard?**

No farmers in Virginia are required by law or regulation to implement the VA 590 Standard. Participation in Virginia NRCS technical and financial assistance programs is voluntary.

However, farmers may voluntarily enter into financial assistance contracts with NRCS that include the obligation to implement the VA 590 Standard. If such a contract is not honored and the VA 590 Standard is not properly carried out, the farmer might not receive the

financial assistance he expects. The farmer may also be liable for interest and penalties for not fulfilling his side of the contract.

NRCS financial assistance contracts that trigger the need for VA 590 implementation generally fall into two categories:

- i. Contracts providing financial assistance specifically for 590 nutrient management implementation. This includes contracts for carrying out both basic and enhanced nutrient management.
- ii. Contracts providing financial assistance for manure storage and handling facilities. Although the farmer might not be paid specifically for implementing nutrient management, implementation of VA 590 is required on the land receiving manure from the cost-shared structures.

**c. How does the VA 590 compare to the State of Virginia’s nutrient management planning rules?**

For at least 20 years, the State of Virginia has maintained its own nutrient management planning system and regulations. As part of this system, Virginia Department of Conservation & Recreation (DCR) has a certification program for NMP writers. State law requires that certified Virginia NMP writers prepare nutrient management plans that meet DCR criteria and are customized to the farmer’s fields and crops.

The concept at the core of the VA NRCS 590 Standard is that each 590 NMP must be prepared by a certified VA NMP writer. Therefore, a first key step in implementing the VA 590 Standard is for the farmer to work with a certified VA NMP writer. This also means that every NMP that meets VA 590 criteria will also meet VA DCR state-level criteria.

But the VA 590 Standard can in some cases require more than the minimum required by DCR and the State of Virginia. For example, the VA 590 Standard requires not only proper management of nutrients, but also a cropping system that keep erosion at a tolerable level over the long term. This reflects NRCS’ broad mission to not just promote wise nutrient use, but to conserve soil and other resources on the farm while promoting productive and profitable farming systems.

**d. What are the minimum requirements for “Basic” VA NRCS 590 implementation?**

There are 10 minimum elements that must be included in every NMP and that the farmer must carry out to implement the VA NRCS 590 Standard in all cases. These ten minimum elements or “basic 590” requirements are summarized on the cover page of the VA 590 Jobsheet, which is attached to this document. The complete Jobsheet may be obtained from any local NRCS office or the following link:

<http://efotg.sc.egov.usda.gov/references/public/VA/VA590js.pdf>).

Most of the 10 basic 590 elements are identical to elements in the State of Virginia’s nutrient management planning regulations. Therefore, certified VA NMP writers should be familiar with most of them already.

As explained below, growers wishing to go beyond the minimum required for basic 590 implementation can potentially receive additional NRCS financial assistance for doing so. But all farmers implementing the VA NRCS 590 Standard, including farmers carrying out

enhanced nutrient management, must at a minimum implement all 10 basic 590 requirements.

**e. What are the requirements for “Enhanced” VA NRCS 590 implementation?**

Virginia NRCS offers a financial assistance program under EQIP called “590 Level C” that encourages growers to go beyond the minimum required for VA 590 implementation. A few examples of going beyond the minimum include:

- i. Injecting fertilizer or manure below the soil surface to minimize volatilization and runoff losses of nutrients while minimizing soil disturbance.
- ii. Using variable rate fertilizer application technology to better distribute nutrients to portions of the field where they are needed, rather than applying a uniform “average” rate across the entire field.

Implementing “enhanced 590” can best be thought of a two-step process. First, the farmer must implement all aspects of basic 590 nutrient management. This includes prepping and carrying out key elements of the NMP, as well as keeping associated records documenting basic 590 implementation. Next, the farmer must carry out one or more enhanced techniques that go beyond the minimum required for basic 590. The enhanced techniques to be carried out might or might not be described in the NMP. The grower must also keep records demonstrating that these enhanced techniques have been carried out.

**3. Clarification on 590 recordkeeping in Virginia**

**a. What type of recordkeeping is acceptable to demonstrate VA 590 implementation?**

The VA 590 Standard states that farmers must keep records to demonstrate that they have properly carried out the minimum requirements of their NMP. There is no specific recordkeeping format or form required. Records of VA 590 implementation may be kept in any format that makes sense to the farmer. For example, the records may be kept on a computer or handwritten into a notebook.

In order to satisfy the *basic* VA 590 Standard, NRCS expects all records of nutrient applications and other relevant field activities to at a minimum:

- i. Be well-organized, legible, and understandable.
- ii. Match what was recommended in the NMP.

Records documenting implementation of *enhanced* nutrient management techniques must also be well-organized, legible, and understandable. Whether or not enhanced nutrient management techniques should be planned and documented in the NMP will vary on a case-by-case basis. Therefore, it is not strictly necessary that records of all enhanced nutrient management techniques match what is recommended in the NMP.

Although no specific 590 recordkeeping form is required by VA NRCS, farmers can obtain optional 590 record sheets from their local NRCS office. These optional recordkeeping sheets can also be found at the following weblinks:

- i. 8.5”x11” handwritten:  
<http://efotg.sc.egov.usda.gov/references/public/VA/VA590recordkeepingsheetSmall.pdf>;

- ii. 8.5”x11” fillable pdf:  
<http://efotg.sc.egov.usda.gov/references/public/VA/VA590recordsheetSmall8x11Fillable.pdf>;
- iii. 11”x17” handwritten,  
<http://efotg.sc.egov.usda.gov/references/public/VA/VA590recordkeepingsheetLarge.pdf>.

**b. What if farmer records don’t match the NMP for basic 590?**

When the time comes to plant or fertilize a crop, what’s needed in the field today may differ from what was planned and written in the NMP document months or years before. This is especially true on Virginia farms with manure and complex, variable crop rotations. This is why one requirement of the core VA NRCS 590 EQIP financial assistance program is an annual conference between the farmer and his certified VA NMP writer. The goal is to keep the NMP updated as farmer objectives and conditions on the ground change.

Nevertheless, it is not unusual for some farmer nutrient management activities in the field to differ from what was recommended in the NMP document with respect to one or more basic 590 elements. What should be done in these cases?

First, farmers should follow this guiding principle: the purpose of VA 590 Standard and associated financial assistance is to ensure proper application of nutrients to the land, not to require that NMP documents are blindly followed. If changes in planned cropping sequence, in-season testing, or other legitimate factors lead to deviation from the recommendations listed in the NMP, the grower should focus on ensuring that actual nutrient applications and other field activities are consistent with technical criteria in the VA 590 Standard for nutrient application rate, nutrient application timing, etc. For many farmers, a wise course of action is to call the NMP writer ahead of time to verify that the new course of action will satisfy VA 590 criteria.

Second, the farmer should use one of the following two options to document what occurred:

- i. A certified VA NMP writer changes the NMP document after-the-fact.  
Use this option when there are major differences between the NMP document and actual conditions in the field, such as significant changes in crop sequence or manure source. In this case, the NMP document is adjusted to match the farmer’s field records. Therefore, the records will end up matching the NMP.
- ii. A certified VA NMP writer documents a “justifiable deviation” from the NMP.  
The best way to document a justifiable deviation will vary on a case-by-case basis (see below for more detail on what constitutes a “justifiable deviation”). In all cases, an explanation for the justifiable deviation must be included in the farmer’s records. Depending on the nature and extent of the deviation, an appropriate write-up might be a formal letter or a simple email sent by the certified VA NMP writer to the farmer and the local NRCS office. Or it might be a handwritten note in the margin of the farmer’s records. In all cases, include the VA NMP writer’s certification number. The key concept to remember is as follows: if the farmer’s basic 590 field records do not match the NMP, then there should be a written explanation somewhere of why this deviation occurred and why it is justified.

### c. What is a “justifiable deviation” from the 590 NMP?

As explained above, it is not uncommon for actual nutrient applications and other activities in the field to differ from what was recommended in the NMP document. Such deviations can be justifiable if they are based on sound agronomic and environmental principles. A number of examples of justifiable deviations are provided below. Please note that these are just examples. A very wide range of other potential justifiable deviations may exist.

#### i. Example: Nitrogen application to legumes.

Under VA DCR and VA NRCS nutrient management planning criteria, alfalfa and other legume crops do not require N fertilization, because under normal conditions they can utilize atmospheric N through to their symbiotic relationship with certain soil bacteria. Nevertheless, when N is readily available in the soil, alfalfa and other legumes will preferentially take up that soil N instead of fixing atmospheric N. For example, a 4 ton/ac alfalfa crop removes approximately 180 lb/ac N from the field (Virginia Cooperative Extension Agronomy Handbook, 2000, page 81). Therefore, if the farmer who planned on fertilizing alfalfa with phosphate and potash fertilizer finds a more economical source of those nutrients in the form of manure, then fertilizing the alfalfa with an appropriate rate of manure (and the N in that manure) can be a legitimate deviation from the NMP. Ultimately, the details of each case must be considered and documented to ensure it is justifiable.

#### ii. Example: Nitrogen application to cover crops.

Some conservation-minded growers want to produce high biomass cover crops, for example in order to provide a mat of residue into which soybeans will be no-till planted and to build soil organic matter over time. On many fields, particularly sandy soils managed under tight nutrient budgets, supplemental fertilization may be needed to achieve the desired level of cover crop growth. For example, an application of 40 lb/ac of N fertilizer topdressed onto a well-established rye cover crop for this purpose can be both agronomically and environmentally sound – and therefore can be a justifiable deviation from the NMP, which will recommend no fertilizer applications to a cover crop. Ultimately, the details of each case must be considered and documented to ensure it is justifiable.

#### iii. Example: Adjustment to corn sidedress N rates based on PSNT

The pre-sidedress nitrate test (PSNT) is often used to adjust sidedress N rates for corn. The general guideline is that a PSNT result greater than 20 ppm nitrate indicates no additional sidedress N is needed. Page 64 of the DCR Standards and Criteria (<http://www.dcr.virginia.gov/documents/StandardsandCriteria.pdf>) recommends other sidedress N ranges for lower levels of nitrate in the PSNT results. But the same page 64 also emphasizes that a wide range of other in-season conditions should be considered when adjusting sidedress N rates for corn based on the PSNT. Thus, deviation from the general PSNT guidelines can be justifiable in certain fields under certain conditions, as long as that deviation is agronomically and environmentally sound and properly documented. Ultimately, the details of each case must be considered and documented to ensure it is justifiable.

In summary, for NRCS purposes, the farmer may justifiably deviate from his NMP when the final outcome is consistent with VA DCR and VA NRCS nutrient management planning technical criteria and/or with sound agronomic and environmental principles. This should not be taken as a “green light” by farmers to not follow their NMP. Justifiable

deviations should be explained in writing by a certified Virginia NMP writer and both the farmer and the NMP writer should expect that explanation to be closely analyzed by NRCS.

An important note: “Justifiable deviation” is an NRCS-specific term. It helps define what level of NMP implementation is acceptable to NRCS for participation in voluntary NRCS technical and financial assistance programs. Other agencies in Virginia may not use this term and may not allow the same level of flexibility that NRCS allows. Furthermore, “justifiable deviation” as defined here refers only to the farmer deviating from his written NMP when applying nutrients or carrying out other activities in the field. It does not refer to certified VA NMP writers deviating from their obligation to follow VA DCR Standards & Criteria when writing NMPs. In all cases, all NMPs must be written according to VA DCR and NRCS guidelines.

**d. What assistance is available from local VA NRCS offices for organizing farmer nutrient management records?**

Assisting farmers with in-depth nutrient management tasks such as organizing field records and documenting changes to the NMP or justifiable deviations from the NMP can be very time-consuming. In light of the very heavy workload faced by most NRCS offices, local NRCS personnel will typically have little time to spend helping farmers organize their records of VA 590 implementation.

The key to success with implementation of NRCS programs is for farmers to communicate openly and frequently with local NRCS personnel. Therefore, NRCS does not intend to discourage farmers (or their third-party advisors) from calling and asking questions of local NRCS staff related to 590 and associated recordkeeping.

But NRCS does intend to emphasize that, on in-depth VA 590 implementation task such as organizing records, it is the responsibility of the farmer (and, if applicable, the farmer’s third-party consultant or advisor) to prepare and present records that meet NRCS expectations.

**e. In summary, what are VA NRCS expectations for farmers with respect to nutrient management recordkeeping?**

- i. When planning the 590 nutrient management practice, the local NRCS representative and the farmer client should agree on a time period for 590 implementation. The starting and ending month and year for this 590 implementation period should be noted in Section A1 of the 590 Jobsheet (see box A1-05)
- ii. Virginia farmers implementing the VA 590 Standard should be prepared to submit to their local NRCS office records that demonstrate that all basic elements of the NMP have been carried out (see ten minimum requirements above) for the planned 590 implementation period. If financial assistance is provided for going beyond the basic NMP with enhanced techniques, then records related to those enhanced activities should also be submitted.
- iii. Any records submitted to NRCS as proof of basic or enhanced VA 590 implementation should be well-organized, legible, and understandable.
- iv. For all basic 590 elements, the farmer’s records should match the NMP; i.e., they should show at a minimum that all key NMP recommendations were carried out in

the field throughout the applicable implementation period. Where the records do not match the NMP, a written explanation should be included documenting why the deviation from the NMP was justifiable. Explanations of justifiable deviations should be prepared by a certified VA NMP writer (include the writer's current certification number).

- v. If the farmer has committed to implementing enhanced nutrient management, he should submit additional records demonstrating that the required number and type of enhanced techniques has been carried out. Whether these particular records must match techniques planned and documented in the NMP will vary from case to case.
- vi. If the farmer submits records to NRCS that don't meet the above expectations, the farmer will typically have two options:
  - 1. Return home and reorganize the records. If necessary, obtain third-party assistance in doing so.
  - 2. Give up on implementing the VA 590 Standard. This also means giving up any associated 590 financial assistance.

#### **4. Clarification on involvement by third-party consultants or advisors in 590 implementation**

In many cases, 590 nutrient management implementation and associated recordkeeping will be complicated. Therefore, VA NRCS recommends that farmers implementing the VA 590 Standard find and work closely with a reputable, reliable, and knowledgeable third-party consultant, advisor, or NMP writer.

This advisor can be an unpaid public-sector employee such as an Extension Agent or DCR staff member. This advisor can also be a paid private-sector consultant or crop advisor.

For certain tasks, including preparation and modification of the NMP, annual conferences about the NMP (required for all EQIP 590 contracts), and documentation of justifiable deviations, it will be important to have the assistance of a certified VA NMP writer. However, a consultant or advisor who is not certified can also be extremely helpful with a wide range of nutrient management tasks, including recordkeeping.

Ultimately, it is up to the farmer to determine whether he needs third-party assistance to fulfill his 590 responsibilities and meet NRCS expectations for nutrient management recordkeeping.

Before signing NRCS contracts that involve 590 implementation, farmers should first consider how much assistance from a third-party consultant or advisor they will need to carry out their nutrient management obligations. If private-sector services are needed, farmers should then budget a portion of the NRCS funds that they will receive for paying a consultant or advisor.

Farmers can obtain names of third-party NMP writers, consultants, and advisors from the following sources. This is not an exclusive list and many other potential sources exist.

- i. Virginia DCR maintains a list of certified VA NMP writers available for hire. Obtain the latest list from the DCR website:  
[http://www.dcr.virginia.gov/soil\\_and\\_water/nutmgt.shtml](http://www.dcr.virginia.gov/soil_and_water/nutmgt.shtml)
- ii. The American Society of Agronomy has a number of relevant certifications including Certified Crop Adviser (CCA) and Certified Professional Agronomist (CPAg). Find local CCAs and CPAg professionals by searching at the following website:  
<https://portal.sciencesocieties.org/BuyersGuide/ProfessionalSearch.aspx>

iii. Consider contacting the following local agencies and entities:

- Nearest DCR office (for listings, see [http://www.dcr.virginia.gov/soil\\_and\\_water/swintro.shtml#regional](http://www.dcr.virginia.gov/soil_and_water/swintro.shtml#regional))
- Local Soil & Water Conservation District (for listings, see <http://www.vaswcd.org/district-directory>)
- Local Extension Office (for listings, see <http://www.ext.vt.edu/offices/index.html>)

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## Nutrient Management

### Virginia Conservation Practice Job Sheet

590

#### General Criteria Applicable to All Purposes

A nutrient management plan (NMP) must be prepared that seeks to maintain or enhance crop production while minimizing resource degradation.

The NMP shall be prepared by an individual certified as a NMP writer by the Virginia Department of Conservation & Recreation.

All information and recommendations in the NMP related to crop rotations, tillage, nutrient incorporation methods, and manure production (including animal numbers and manure storage capacities) must match the NRCS conservation plan and animal waste management system plan.

The NMP and associated NRCS conservation plan must recommend crop rotations, tillage methods, and other practices that will achieve “T” (soil loss tolerance). In addition, no active gully erosion is allowed on any fields meeting the 590 Standard.

If the NMP recommends manure/biosolids applications on fields with Very High (VH) soil test P levels, those rate recommendations must be derived from the P-Index using RUSLE2 erosion estimates (or the recommended rates must be no greater than the P-Index-derived rate).

See the Standard for details on minimum NMP content. Minimum NMP content requirements of the VA 590 Standard are as least as stringent as minimum criteria for NMP content in Virginia law.

In addition to obtaining the above NMP, the NRCS client must also implement the following “Basic 590” elements in order to satisfy this Standard:

1. Follow application rate recommendations in the NMP for N, P, K, and lime.
2. Follow timing recommendations in the NMP related to N fertilizer. Specifically, apply no inorganic N in the absence of a growing crop or more than 30 days ahead of planting.
3. Follow the spreading schedule in the NMP for any applied manures/biosolids. In limited cases, manure/biosolids spreading may be allowed up to 60 days (or more) before planting

on sites not identified as environmentally sensitive (see 590 Standard for details).

4. Follow restrictions in the NMP on nutrient applications to frozen ground or snow. In particular, never spread fertilizer or liquid manure/biosolids on snow or frozen ground.
5. On fields listed as environmentally sensitive sites, follow more aggressive limits on nutrient timing. In particular, split-apply inorganic N to row crops and small grains. Also, never spread manure/biosolids more than 30 days before planting or in absence of a growing crop.
6. Follow all NMP recommendations for not spreading manure/biosolids in designated setback areas (near wells, springs, etc.).
7. Ensure the NMP is based on up-to-date soil and manure tests (tests no older than three years; liquid manure tests no older than one year).
8. Ensure the NMP is updated to reflect any increases in animal numbers or other significant livestock or cropping system changes that occur after the NMP was first written.
9. Implement crop rotations, tillage methods and other practices necessary to achieve soil erosion requirements of the VA 590 Standard – “T” (soil loss tolerance) and no active gullies.
10. Keep records detailed enough to demonstrate implementation of all elements listed above.

#### Considerations

Going beyond the above minimum criteria and implementing “Enhanced 590” is recommended, but not required. Options for enhanced nutrient management include more intensive collection and analysis of nutrient management data. Other options include cropping system changes to enhance nutrient cycling as well as enhancing the rate, timing, placement, and form of nutrient applications to further reduce environmental losses.

**NOTE: This summary does not address all requirements and considerations in the VA NRCS Nutrient Management Standard (VA-590). Consult the Standard for further details.**